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THE DIVIDED SELF.

IN the inorganic world each combination of elements is at a stable equilibrium with definite qualities and relations. The organic world, however, seems to have a double equilibrium, some elements of survival being provided for by one mechanism and some by the other. Perhaps it would be better to say that the mechanism of survival has two poles; at each pole some of the functions of survival are carried on. When the surrounding temperature varies sometimes heat must be conserved while at other times an excess of heat makes more rapid radiation advantageous. This double set of conditions can be met only by some means of conserving heat and by some means of radiating it, each of which is dormant or active as the external conditions demand. A tree must meet the conditions of winter by evolving some protection against frost. In summer another group of mechanisms is needed by which growth is promoted. Evolution may be measured by this growth of double mechanisms, the higher organisms having greater power to make dormant or active their various mechanisms each of which promotes survival under particular conditions. More light or less light, more heat or less heat, more food or less food evoke or diminish activity even of the lowest forms of life; as the scale of living rises their importance increases. Mechanisms to conserve heat, light, and food must arise which arrest loss under conditions of deficit. Means must also be devised to prevent injury from an excess of light, heat or nutriment. Our major organic reactions relate to these simple facts. No theory of evolution is clarifying that does not show how this double set of conditions is turned to profit.

On the basis of these facts a contrast can be made between the mechanisms by which the conditions of deficit are met and those demanded by a condition of surplus. The problem of deficit is to reduce the waste of an organism more rapidly than the deficit increases and thus create a stable equilibrium at some point of minimum activity. Under a condition of surplus the waste of material must increase more rapidly than the increase of the surplus, thus ending in a new equilibrium where nutriment, energy, and activity are equal. Each surviving organism must have means of serving these ends, and its adaptability is greater and the type of organism higher as the distance between the two stable points increases. It is not difficult to separate the mechanisms that conserve under conditions of deficit from those evoked by conditions of surplus. The deficit mechanisms are those which lead to race survival while the surplus mechanisms are those which promote personal activity. The one insures the continuance of life, the other makes life worth living. The ultimate survival is thus not in the mechanically superior but in the undifferentiated who waste energy. What they do is less effective, but they can do more things and hence are more successful in meeting new conditions. Stable conditions thus promote specialization and economy. Variable conditions give an advantage to flexibility and waste.

The full force of this principle is not perceived until we recognize that the same contrast holds between the different parts of each animal that is true of contrasted organisms. Each being has specialized organs which guard it from deficit, and undifferentiated organs whose activity waste its surplus. Developed organs economize energy, but other undifferentiated parts waste the surplus the adjusted parts create. Energy at the deficit pole is used up making specialized mechanisms active while at the surplus pole it is a pulse that, passing through unspecialized organs, creates a great momentary effect but with no abiding result. Deficit energy thus creates adjustment while surplus energy is a temporary stimulus to forms of activity that are non-adjustive. This difference may be pictured by contrasting the energy used up in the specialized bodily organs with that which arouses brain action. The one produces measurable results; the other is visible in consciousness merely as emotion.

Brain activity is crude and wasteful in comparison with the specialized bodily organs and yet we regard it as the seat of our higher life. Why? The reason lies in the difference between energy that moves specialized mechanisms and that which affects us not through adjustive acts but as a pulse felt in consciousness as emotion. In addition to those useful for adjustment, surplus energy makes many embryonic mechanisms active. The flow of thought has thus injected into it elements which conflict with external reality.

Armed with this thought dreams get a new interpretation. They are not the partial working of completed mental mechanisms but mental activity in parts too imperfect to have an adjustive value. A dream is the striving of an organ to do what it cannot do. The impulse fails not because of external repression but because of internal organic defects. It is free from the restraints which nerve structure creates. A dream is the imperfect action of an undeveloped part lacking the completeness of perfect sensory reactions and has therefore the order of the caveman or of a still earlier type. It is their life, their ideas, and their gropings that are reflected, not those of the men of to-day. Could we fix the exact order in which conscious life became capable of perceiving ideas we would have the order of the dream world. It is this that gives sex imagery its control in dreams and makes sex facts color dream life. Was there not some stage in evolution when sex impulses represented the higher form of the then conscious life? If so, dreams are the result of an awakening of similarly undeveloped and unused parts of the brain. Repression of dream concepts would then be a normal event due to the flow of energy to the adjustive organs when they are called into activity. Day-dreaming and other products of the imagination are not the results of complete organs partly working but the vaguer workings of incomplete organs that have not the power to rise to the level of complete sensory activity. There is always the grasping for the unattainable, a mysterical order of events and a seeming objectivity which are normal products if the action is that of incomplete organic mechanisms. The abnormalities of conduct are caused by the belief that these vague visions are really of a higher order than the concepts of normal life. There is a justification of these higher values if the essential points of my argument stand criticism. The organically high on which our sense-impressions are based are merely deficit organs through which our adjustment is effected.

Sense-impressions reflect the stage of development of multi-cellular organisms who perform acts by means of definite structures. Earlier than this, corresponding to the amebic stage of development, consciousness is a pulse passing from point to point on a surface. Its physical manifestation would be a temporary arm like the projections of an ameba. It is here, there, and everywhere in turn but nowhere has it continuity. The pulse rises at a given point and then sinks back to reappear at some other point. Each rising wave is an embryonic self quickly to be replaced by another, equally fugitive. The lowest form of thought has thus all the inconsistencies which we find in dream life. There are slight flows in particular directions, then a break followed by a rise of a similar flow of thought under new conditions.

On its conscious side a pulse is a wish seeking fulfilment. Each amebic organ starts on a definite path but dies out with its wish unattained. Then the wish reappears in some slightly different form at some new point on the surface over which the pulse is passing, strives again for fulfilment and fails as before. There is thus a continuity in the series in the sense that a single wish is striving for fulfilment, but objectively considered they are a series of surface projections created by a passing pulse of energy. Primitive thought is tragic thought, for the wish in each of its forms fails; its revival in a new form leads to some new tragedy. The thought of objective continuity is foreign to the primitive thinker. He thinks of himself in the form which seems to lead to wish-fulfilment. But each endeavor comes to a tragic end and then some other form is assumed. All this is foreign to our way of thinking. To us the self is a permanent entity while the objects passing through consciousness seem to change. But if surplus energy in its earlier form was a pulse rising in consciousness as a wish then it is the wish and not the self which gives it its early unity. Self is a persistent wish and persistence can come only through some structural aid. When the amebic movements develop into structures the wish can persist in a fixed form and tend more fully to reach its fulfilment. The self is the subjective side of the structure in which the wish persists. Perhaps it is better to say that the wish becomes will when aided by structure, and what we call our self is our will personified. A primitive wish dies because it has not mechanism to aid fulfilment. Will is persistence and persistence demands inherited mechanisms which come only with subsequent evolution. An unstable self is thus the first self. Each such self dies, the wish appearing perennially in some new form.

In a grade higher than this dream world we have the beginning of stable conscious thought, yet with the same breaks which dream life discloses. This early form of thought we call reasoning by analogy. We start with some thought and cherish it for a time. When difficulties appear we substitute in its place some similar thought, think in its terms until difficulties arise, then a new transformation occurs accompanied by a new thought movement. That which persists through the series is not the identity of the object but of the wish which seeks fulfilment through the reasoning. Such is reasoning by analogy. A still higher form is what logicians call reasoning by substitution. Instead of one concrete thing being substituted for another, each substitution is more abstract than its predecessor and thus escapes some of the snares into which concrete thinking leads. The same wish, however, is back of the abstract form as it is behind the concrete expression. Trains of thought persist longer in its higher forms and have a better structural background. But thought is always tragic in any form which it has as yet attained. Somewhere there is a break and then it starts again under some new guise.

Such are the elements in tragic thought. It is the dominant form of thought even in the higher manifestations of conscious life. There is however another type of thinking in formation which may be called prophetic or idealistic thought. Here the end is visible but the means of reaching it is defective. There is in this the same futile effort to fill in the gaps between the wish and the end, a failure but a hopeful recovery in some new form. In this the wish has risen to the self, making it seem that the breaks are not in self but in objects about it. This prophetic thought becomes a philosophic thought when a defense of its premises is demanded, and is transformed into scientific thought when the will seeks to fill in the gaps which prevent wish-fulfilment. Back of all thought however is the wish which is a pulse of surplus energy, not an organic structure. The structure is our means of persistence, the biologic embodiment of primitive wishes. The will is not an ethereal something, but substantial bodily structure. It is wish objectified, not an entity dematerialized.

The basis of the dualism of mind is now apparent. Bodily mechanisms are designed either to conserve energy, or they tend to discharge surplus energy in ways to create a higher life. The conservative mechanisms come into play when a deficit is faced. Surplus energy expresses itself in emotion. Putting this contrast more concretely, the deficit mechanisms are our nerves. They become active when any danger to life is involved. In contrast to this the seat of the surplus mechanisms is in the blood. It is blood energy which starts our activity and thus drains the system of energy which undischarged would lead to physical abnormality. The nerves try to conserve, the blood tries to discharge. Between them an eternal conflict is on, the representatives of which in consciousness are fear and desire. Desire is wish striving for a fulfilment through the expenditure of energy. When controlled by fear we conserve the energy which wish domination would drain. We can therefore rightly speak of a nerve psychology and a blood psychology placing the two in opposition to each other. The seat of the one is in the nerves with fear as its conscious representative while blood surplus is the antecedent of the other with wish impulse as its consequence. Wishes are thus on their physical side surplus discharges which in their primary form are sexual. Only the better organized nerves have the power to check this expenditure of energy and thus to conserve life. We thus have the nerves prompted by fear acting against the expenditure of energy which crude wish mechanisms tend to promote. The presence of surplus nutriment starts the wish mechanisms while toxins in the blood irritate the nerves and thus create a flow of associated fears. Fears are trains of thought depressing activity while sex imagery denotes a discharge of some accumulated surplus. The play of fears and wishes thus gives an ever-varying content to thought, the source of which lies in blood transformations. Our mind reflects what the blood originates and its dualism has the same source.

This explanation resembles that of the Freudian psychologists with the difference that conscious phenomena are traced to their physical background instead of referring them to a mysterious subconsciousness. To me it is axiomatic that the content of consciousness is a reflection of the physical forces which underly it. No explanation is satisfactory which does not relate the content of consciousness to these antecedents. Sex yearning is the leading bodily tendency suppressed by the control of the central nervous system but it is only one of these suppressed tendencies. The action of the higher nerves is to change bodily activity from some part well supplied with surplus energy to some part more useful to the organism. If the drain of surplus from the naturally dominant part is not complete it escapes by indirect routes in spite of the repression exercised by the higher nerves. This is the cause of our dreams and by their analysis we can discover the source.

When an unobstructed flow of pure blood illumines the field of consciousness in a dream our elation takes a religious form and we interpret the content as a revelation. If the illumination is less brilliant we associate it with motion and hence think of the object as a bird or a horse. If the illumination is indistinct the figure becomes dangerous and fills the beholder with terror. This is the familiar nightmare. If still more imperfect, the form breaks up into lines and then the dreamer sees dragons or snakes. We thus get the background of our dreams out of the different degrees of illumination which the escaping energy projects into the field of consciousness. The blood throws on the screen a more or less distinct outline which we fill in by the associations which such figures arouse. The body of the picture expresses some dominant bodily tendency, but the detailed interpretation accords with our conscious memories. Intense illuminations interpreted as the sun, the hero, and the woman come from an overflow of sex energy. The bird and the horse are a reflex of muscular suppressions, while the bear and the snake are due to toxic obstructions in the blood. In each case there is a revolt and a discharge. During the revolt we dream; with the discharge we wake. The difference between the dreams of sex origin and those which are not is that in sex dreams the dreamer seems to be drawn by some irresistible force toward the object while in non-sexual dreams the object moves toward him. He is active and conquers in the first case while he is passive, subdued, or terrified in the other. This would seem to indicate that the blood was purer and the consciousness more intense in sex dreams while in the other type the blood contains a toxic element which is reflected in consciousness as fear. Bright figures seem to laugh while dark ones scowl. We yearn to approach the one and to avoid the other.

With this advantage we can face the hardest of biologic problems. Can a result influence its cause? This is the problem of the inheritance of acquired characters in a more general form. Those who try to show how somatic cells can influence germ cells have indeed a hard nut to crack, because they think of structure as an ultimate and not itself the result of more primitive forces. Structure is caused by energy pulses and to them we must look to find the link between somatic and germ cells. Pulses of energy are on their conscious side wishes. It is admitted that wishes can influence the growth of somatic cells. If we want a strong arm or leg and keep on exercising them in the end we will have strong arms and legs. Wishes can therefore influence structure making it more effective in wish-fulfilment. As soon as an organism begins to wish for structural change it begins. If this is granted the process by which cell structure is altered becomes apparent. It is not the structure which is inherited but the wish to do acts which demand structure. We are all familiar with the thought of inherited memories. These escape some of the difficulties which the inheritance of somatic structures cause but not all of them, for memory is itself structural. Inherited wishes avoid these difficulties since on their physical side they are pulses of energy and not organic structure. Can the wish of the parent arouse the same wish in the offspring? Yes, if the wish is a pulse of energy and not a structural product. The pulse which is wish in consciousness passes through the whole organism affecting every part to some degree. The child in the womb or the undischarged sex cell would be somewhat altered by the pulse, though doubtless in a less degree than the cells adjacent to the seat of consciousness. The child thus receives the impetus which the wish pulses aroused in the parent, but earlier in its existence than the parent received it. The wish begins to work in the child sooner than in the parent and thus in it affects a greater structural change than what occurred in the parent. In this way we would have a gradual change of structure in harmony with wishes without any direct inheritance of structure.

It is said that a child in its development passes through all of the stages through which its animal ancestors have gone. In each stage the penetrating wish forces a new growth which leads to some higher form of life before the maturity of the cell is attained. But this new growth is again affected by new wishes which, stopping growth in its natural direction, forces it to reform itself in some new way. The child never completes any of these stages because the wish element in its nature assumes new forms before any of its early structures gain enough maturity to stabilize themselves. All this is possible if wishes are on their physical side pulses of energy and not structure. Structure stabilizes energy, makes it move in particular directions but in the end it is the servant of energy and not its master.

These contentions may be regarded as mere theory but if we look in the right quarter supporting facts may be found. This can be done by contrasting wish structure with germ structure and showing what types of structure are in each class. Germ structure represents the tendencies which result from the constituents of the germ cell. Wish structure is the modification of this original bent due to wish pulses which pass through an organism or are transmitted by contact from parent to descendant. Wishes start as mere pulses of energy, but their movement from part to part modifies structure making its throbs correspond to those of the wish impulse. Living structure vibrates and grows through its vibrations. Wish pulses can modify these vibrations and thus influence structural growth. There is thus an antagonism between structure which cannot satisfy wishes and that which leads more fully to wish-fulfilment. These tendencies correspond to what we find in catabolic and anabolic structure. The anabolic conserves and thus tends to make growth correspond to the original tendencies which come from the germ cell. Catabolic structures get their impetus from the fresh energy coming from the outside. Anabolic structure is a defense against deficit conditions. It preserves against shock and hardship. Catabolic tendencies are primarily discharges of surplus energy. When changed into structure they increase the structural activity to the point where the surplus energy is used up. This activity is partly wish pulses, and thus the new structure permits wish-fulfilment to a greater degree than the older more static forms.

We thus get two selves, a self which seeks to conserve, and a self which strives to waste energy but in doing so creates new wish structure. The anabolic is the basis of race continuity. It sacrifices the personal to animal continuity. The wish, however, is personal and thus strives for a fuller expression of the present self. Its end is emotion, joy, and perfection. It sacrifices race ends to those of personal continuity. The conflict between the two is incessant and ever-increasing in violence. So great is this opposition that heredity finds it easier to separate them in two sexes than to continue unisexual organisms. In sex the two tendencies split and then reunite in the formation of new beings. The male thus represents wish structure while in the female the germ structure dominates. But every one is partly male and partly female and thus has in him or her the elements of opposition due to the presence of antagonistic structure. The difference is a problem of dominance and not of kind. The original sex was the female. The male beginning as a microbe has attained his dominance only by the increasing influence of wish on structure by which every structure is more or less changed from anabolic to catabolic forms. The man element even in women is ever growing more dominant.

In these differences between anabolic and catabolic tendencies we find the best evidence of the influence of wish pulses, but the clue once attained, other evidence is forthcoming. The various biologic transformations are examples of the same opposing forces. The wish creates structure and the wish structure is out of harmony with germ tendencies. Hence the germ tendencies try to repress the wish tendencies, with the result that we have the phenomenon of dominance and recession. Normally the wish yields and is suppressed. Germ structure is usually more powerful than wish pulses. Yet the wish pulse becoming structure gradually gains in effectiveness until we have the phenomenon of reduction and regeneration. Some static anabolic part is cast off and a new part formed more under the dominance of the wish pulses. Reduction and regeneration take place easily in the more elementary forms of life and it is here where the wish pulses have the greater influence.

They do, however, influence all impulses, even those we regard as spiritual. The religious enthusiast who has visions thinks they come from without, deeming their commands to be the voice of God. We can accept his evidence as to what happens but must reject his deductions as to how it happens. To get at its origin we must examine the content of the assumed revelation. What did the command tell him to do? Exactly what he has all along been wishing to do. The revelation never reveals anything new. It only repeats what millions of antecedent spirits have seen and hoped for. When Moses heard God's voice it told him to free his people. Can we suppose that he had lived in exile forty years and never thought of the deliverance of his race? We know enough of patriots in exile to realize that exile leads to an increase of race ardor. The voice therefore told Moses not something new but what he longed to hear. It gave him courage to do what he yearned to accomplish. A revelation is thus an intense personal wish objectified. No individual dreams of freeing his race unless his race has long striven for freedom. The prophet likewise is not told in dreams of some unknown vice to oppose. He is told to denounce what he has earnestly sought to counteract. What he has opposed, his race has for ages struggled against. The voice he hears is thus the voice of the ancestral wishes bubbling up within him. He strives to attain what they wanted but failed to accomplish. The growing race pulse creates visions so real that they appear objective. The objective, however, is not objective but merely the wish becoming more urgent than life.

If these acts are once understood a concept of evolution may be formed different from that for which Darwin stands sponsor. It assumes that germ cells vary and that these variations are the starting-point of evolution. The opposing concept of acquired characters broke down through the inability to show how changes in somatic structure modifies germ structure. But the same reasoning carried to its logical limit destroys not merely the evidence that somatic structure influences germ structure but also the evidence that germ structure tends to vary as Darwin assumed. The evidence that germ cells vary rests on the fact that descendants of the same parents differ. The Mendelian theory, however, shows the origin of these differences. It is doubtful if any variation is persistent enough to account for the rise of a new species. They may cause minor changes but not the greater ones on which race evolution depends.

To give an opposing theory a scientific basis the start must be made not in accidental variations but in the influence wish has on structure. If wish can modify structure the difficulties of the theory of acquired characters can be avoided. Wishes modify structure, but the new structure has no power to modify germ cell structure. It is the transmitted wish, not particles of the new structure which modify germ cell activity and hence modify germ structure. A wish is a pulse which appears earlier in the child than in the parent and hence exerts a greater influence. The wish structure of the child will thus be more effective than that of the parent and through its growth gains a dominance not possible under ancestral conditions. These opposing forces become anabolic and catabolic tendencies. Their antagonisms force reductions and regenerations which end in a metamorphosis or a mutation.

A mutation from this view-point is the result of an internal antagonism which ends in the casting off of some static part and its regeneration more in harmony with catabolic tendencies. A new species thus arises through a sudden splitting of the antecedent organism and not through a gradual variation in its germ cell. The causes are internal, recessive, and hence not observed until the split occurs and the accompanying regeneration reveals a new type of being. The seeming suddenness of the change is not sudden after all if we watch at the right spot for its manifestation. We must start with surplus energy and trace its gradual transformation into wish pulses and wish structure to get the key which unlocks the mysteries of organic evolution.

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